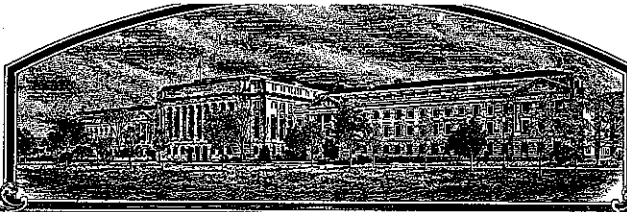


No.

200400165



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Monsanto Company*

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR PLANT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED, AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Freyr'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fourteenth day of June, in the year two thousand and four.*

Attest:

*Belmont*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Anderson*

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the privacy Act of 1974 (5 U.S.C. 552a)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421) Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Monsanto Company		N99-0107	Freyr
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER
800 N. Linbergh Blvd. Mail Zone:E3NA		314.694.6089	200400165
Creve Coeur, Missouri 63167		6. FAX (include area code)	F I L I N G DATE
		314.694.7250	March 31, 2004
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)	FILING AND EXAMINATION FEE:	
Triticum aestivum	Gramineae	F E E S DATE	
		3652.00	
9. CROP KIND NAME (common name)		DATE	
Hard Red Spring Wheat		3/31/2004	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (common name)		CERTIFICATION FEE	
Corporation		432	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION	DATE	
Delaware	1933	05/04/2004	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS		14. TELEPHONE (include area code)	
Ms. Sally Metz 800 N. Lindbergh Blvd. Creve Coeur, Missouri 63167		314.694.6089	
AND Dr. Rollin Sears 6515 Ascher Road Junction City, Kansas 66441		15. FAX (include area code)	
		314.694.7250	

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (follow instructions on reverse)

- a. ☒ Exhibit A. Origin and Breeding History of the Variety  
b. ☒ Exhibit B. Statement of Distinctness  
c. ☒ Exhibit C. Objective Description of the Variety  
d. ☒ Exhibit D. Additional Description of the Variety  
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership  
f. ☒ Voucher Sample (2,500 viable untreated seeds, or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)  
g. ☒ Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)

☒ YES (if "yes", answer items 18 and 19 below) ☐ NO (if "no", go to item 20)

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☒ NO

19. IF 'YES' TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDERS SEED? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? ☐ YES (if "YES", give names of countries and dates) ☒ NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))	SIGNATURE OF APPLICANT (Owner(s))
NAME (Please print or type) Sally Metz	NAME (Please print or type)
CAPACITY OR TITLE Director Wheat Technology	CAPACITY OR TITLE
DATE 1-28-04	DATE

***Exhibit A.***  
***Origin and Breeding History of Freyr***

Freyr originated from the cross "N94-0157//Sumai3/Dalen" which was made in Berthoud, CO during the fall crossing session of 1995. N94-0157 was an AgriPro hard red spring experimental line. Its pedigree was "Sonja/Vance". Single heads were selected from the F2 population of this line at Casselton, ND during the 1996 season. Selections were based on height, leaf rust and scab resistance. Single seed descent was used to advance these selections through the F3 and F4 generations in the Berthoud greenhouse during the fall and winter of 1996-97. F5 headrows of these selections were planted at Park River, ND in 1997 where they were further screened for height, straw strength, foliar diseases, scab, leaf rust and stem rust. Selected F5 headrows were individually bulk harvested. F6 increase plots were grown at Berthoud and observation plots were grown at Casselton, ND, Park River, ND and Crookston, MN in 1998. These lines were further screened on the previously mentioned traits as well as breadmaking quality. The experimental designation of N99-0107 was assigned to one of these lines which was yield and quality tested in AgriPro nurseries in North Dakota and Minnesota during the 1999 through 2003. This line has been tested in the Northern Uniform Regional Nursery in 2002 and 2003. It was evaluated in the Uniform Regional Scab Nursery in 2002. In 2000, 96 headrows were grown in Berthoud, Colorado. Ninety-six head rows with uniform appearance were harvested and planted as a 0.2 acre initial Breeders seed increase in 2001, which produced 333 pounds of Breeders seed. In 2002, a 4.5 acre Breeders seed increase was grown in Berthoud, Colorado, which produced 3621 pounds of Breeders seed. In 2002-2003 an additional Breeders seed increase was grown in Yuma, Arizona, which produced 18,373 pounds of Breeders seed. In 2004 two Foundation seed increases were grown in North Dakota. Eighty acres were grown in Langdon, North Dakota and 130 acres were grown in Jamestown, North Dakota, which produced 600,000 pounds of Registered seed.

Freyr has been uniform and stable since 2002. About 0.1% of the plants were rogued from the initial Breeder's Seed increase in 2001.

Approximately 70% of the rogued variant plants were taller height wheat plants (5 to 15 cm.) and approximate 20% were awnletted wheat plants. Up to 1.0% variant plants may be encountered in subsequent generations.

***Exhibit B.***  
***Statement of Distinctness***

Freyr is most similar to the hard red spring wheat 'Briggs' (South Dakota State University). However, it can be easily distinguished by the following morphological characteristics:

- Freyr has an erect juvenile growth habit stage (Berthoud, CO 2001 and Lucerne, CO 2002). Briggs has a semierect juvenile growth habit (Berthoud, CO 2001 and Lucerne, CO 2002).
- Freyr has a dark green plant color at boot stage (R.H.S. Chart color number #135A; Berthoud, CO 2001 and Lucerne, CO 2002). Briggs has a green plant color at boot stage (R.H.S. Chart color number #137A; Berthoud, CO 2001 and Lucerne, CO 2002).
- Freyr has a lax head density (Berthoud, CO 2001 and Lucerne, CO 2002). Briggs has a middense head density (Berthoud, CO 2001 and Lucerne, CO 2002).

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (*Triticum* Spp.)

NAME OF APPLICANT(S) <b>Monsanto Wheat Technology</b>	FOR OFFICIAL USE ONLY PVPO NUMBER <b>200400165</b>
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) <b>800 N. Linbergh Blvd. Creve Coeur, MO 63167</b>	NAME OR EXPERIMENTAL DESIGNATION <b>Freyr</b>

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in the first box when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized standard may be used to determine plant colors; designate system used.

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

**1** 1=Common 2=Durum 3=Club 4=Other (specify) \_\_\_\_\_

2. VERNALIZATION:

**1** 1=Spring 2=Winter 3=Other (specify) \_\_\_\_\_

3. COLEOPTILE ANTHOCYANIN:

**1** 1=Absent 2=Present

4. JUVENILE PLANT GROWTH:

**3** 1=Prostrate 2=Semi-erect 3=Erect

5. PLANT COLOR (boot stage):

**2** 1 = Yellow-Green 2 = Green 3 = Blue-Green

6. FLAG LEAF (boot stage):

**2** 1 = Erect 2 = Recurved

**2** 1 = Not Twisted 2 = Twisted

7. EAR EMERGENCE:

**0 0** Number of Days Earlier Than \_\_\_\_\_ \*

**0 2** Number of Days Later Than Briggs \*

8. ANTHER COLOR:

**1** 1 = YELLOW 2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns):

**0 3** cm Taller Than 2375 \*

**0 0** cm Shorter Than \_\_\_\_\_ \*

\* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

## 10. STEM:

## A. ANTHOCYANIN

**1** 1= Absent 2=Present

## B. WAXY BLOOM

**2** 1=Absent 2=Present

C. HAIRINESS (*last internode of rachis*)

**2** 1=Absent 2=Present

D. INTERNODE (*specify number*)

**1** 1=Hollow 2=Semi-solid 3=Solid

## E. PEDUNCLE

**1** 1=Erect 2=Recurved

**1 3** cm Length

11. HEAD (*at Maturity*):

## A. DENSITY

**1** 1=Lax 2=Middense 3= Dense

## B. SHAPE

**1** 1 = Tapering 2= Strap 3 = Clavate 4 = Other (*specify*)

## C. CURVATURE

**2** 1 = Erect 2 = Inclined 3 = Recurved

## D. AWNEDNESS

**4** 1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned

12. GLUMES (*at Maturity*):

## A. COLOR

**1** 1 = White 2 = Tan 3 = Other (*specify*)

## B. SHOULDER

**2** 1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate

## C. BEAK

**3** 1 = Obtuse 2 = Acute 3 =Acuminate

## D. LENGTH

**2** 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm)

## E. WIDTH

**2** 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm) 3 = Wide (ca. 4mm)

## 13. SEED:

## A. SHAPE

**1** 1 = Ovate 2 = Oval 3 = Elliptical

## B. CHEEK

**2** 1=Rounded 2=Angular

## C. BRUSH

**3** 1=Short 2=Medium 3=Long

**1** 1 = Not Collared 2 = Collared

## D. CREASE

**2** 1 = Width 60% or less of Kernel  
2 = Width 80% or less of Kernel  
3 = Width Nearly as Wide as Kernel

**2** 1 = Depth 20% or less of Kernel  
2 = Depth 35% or less of Kernel  
3 = Depth 50% or less of Kernel

## 13. SEED: (continued)

## E. COLOR

☒ 3 1 = White 2 = Amber 3 = Red 4 = Other (specify) \_\_\_\_\_

## F. TEXTURE

☒ 1 1=Hard 2=Soft

## G. PHENOL REACTION (see instructions):

☒ 0 1 = Ivory 2 = Fawn 3 = Light Brown 4 = Dark Brown 5 = Black

## 14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

☒ 4 Stem Rust (*Puccinia graminis* f. sp. *tritici*)  
Field races

☒ 0 Stripe Rust (*Puccinia striiformis*)

☒ 0 Tan Spot (*Pyrenophora tritici-repentis*)

☒ 0 Halo Spot (*Selenophoma donacis*)

☒ 0 *Septoria nodorum* (Glume Blotch)

☒ 0 *Septoria avenae* (Speckled Leaf Disease)

☒ 0 *Septoria tritici* (Speckled Leaf Blotch)  
Field races

☒ 4 Scab (*Fusarium* spp.)

☒ 0 Black Point (Kernel Smudge)

☒ 0 Barley Yellow Dwarf Virus (BYDV)

☒ 0 Soilborne Mosaic Virus (SBMV)  
Field races

☒ 0 Wheat Yellow (Spindle Streak) Mosaic Virus  
Field races

☒ 0 Wheat Streak Mosaic Virus (WSMV)  
Field races

☐ Other (specify) \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

☒ 3 Leaf Rust (*Puccinia recondita* f. sp. *tritici*)  
Field races

☒ 0 Loose Smut (*Ustilago tritici*)

☒ 0 Flag Smut (*Urocystis agropyri*)

☒ 0 Common Bunt (*Tilletia tritici* or *T. laevis*)

☒ 0 Dwarf Bunt (*Tilletia controversa*)

☒ 0 Karnal Bunt (*Tilletia indica*)

☒ 0 Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)  
Field races

☒ 0 Snow Molds

☒ 0 Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.)

☒ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)

☒ 0 Black Chaff (*Xanthomonas campestris* pv. *translucens*)

☒ 0 Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)

☐ Other (specify) \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_



15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

<input type="checkbox"/> 0	Hessian Fly ( <i>Mayetiola destructor</i> )	<input type="checkbox"/>	Other ( <i>specify</i> )
<input type="checkbox"/> 0	Stem Sawfly ( <i>Cephus</i> spp.)	<input type="checkbox"/>	Other ( <i>specify</i> )
<input type="checkbox"/> 0	Cereal Leaf Beetle ( <i>Oulema melanopa</i> )	<input type="checkbox"/>	Other ( <i>specify</i> )
<input type="checkbox"/> 0	Russian Aphid ( <i>Diuraphis noxia</i> )	<input type="checkbox"/>	Other ( <i>specify</i> )
<input type="checkbox"/> 0	Greenbug ( <i>Schizaphis graminum</i> )	<input type="checkbox"/>	Other ( <i>specify</i> )
<input type="checkbox"/> 0	Aphids		

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

None

***Exhibit D.***  
***Additional Description of Freyr***

Freyr is a hard red spring wheat developed by Agripro Wheat for the scab prone areas of the Northern Plains. It has medium-early maturity and very good test weight. It has intermediate height and moderately strong straw strength. This line has very good tolerance to scab. It has intermediate to tolerant protection to the prevalent races of leaf rust. It is tolerant to stem rust, however it has intermediate protection to the artificially induced epidemics. It has medium-high protein and satisfactory breadmaking characteristics.

Juvenile growth habit is erect. Plant color at boot stage is dark green. Auricle anthocyanin is present and auricle hairs are present. Flag leaf at boot stage is recurved. Waxy bloom is present on the head, stem and flag leaf sheath. Anther color is yellow. Head shape is tapering and awned. Glumes are glabrous, medium in length and medium in width, with oblique shoulders and acuminate beaks. Seed shape is ovate. Brush hairs are long in length. Seed crease depth is middeep and width is midwide. Germ is small. Seed cheeks are angular. Plant color at maturity is white.

Freyr is broadly adapted to the spring wheat growing areas of North and South Dakota, Minnesota and Montana.

# AGRIPRO

## SpringW Team Quality Summary

Year-Loc		Flour/Wheat Quality				Mixogram				Baking Quality				Comments	
		Wht	Flr	Norris Hard	Flr Yld	Ash	Peak		Nat/Mix Time	Loaf Vol	Grain	Tex	Color		
							Time	HT							
14%mb		14%mb	14%mb	%		min		N.U.	mm	R	%	min	cc	R	R
FREYR															
2001 - MW		14.3	13.2	76	69.3	0.373	4.00	5.0	1151		64.0	4.00	1000	4	3 4
2002 - MW		14.9	14.0	70	68.6	0.431	5.00	5.3	1262		68.5	6.00	1060	4	3 4
2003 - BK		14.6	13.5	69	72.1	0.398	2.75	5.3	947		67.0	2.50	1040	4	3 4
Average:		14.6	13.6	72	70.0	0.401	3.92	5.2	1120		66.5	4.17	1033	4	3 4
PARSHALL															
2001 - MW		14.9	13.9	70	69.3	0.372	3.75	5.0	1129		64.5	3.75	1065	5	2 3
2002 - MW		15.6	14.6	67	70.1	0.522	4.75	5.3	1181		69.5	6.00	1055	5	3 2
2003 - BK		14.8	13.7	70	73.0	0.403	3.50	5.3	1072		68.0	3.00	1085	5	2 2
Average:		15.1	14.1	69	70.8	0.432	4.00	5.2	1127		67.3	4.25	1068	5	2 2

200400165

# **HARD RED SPRING WHEAT SUMMARY - 2002** Uniform Regional Data

## **FREYR VS. VERDE**

STATE	YIELD - BU/A			T.WT. - LBS/BU			HEADING - DAYS			HEIGHT - CM			LODGING - 1-9		
	LOCS	FREYR	VERDE	LOCS	FREYR	VERDE	LOCS	FREYR	VERDE	LOCS	FREYR	VERDE	LOCS	FREYR	VERDE
MINNESOTA	3	47.4	44.5	3	57.3	57.6	3	29.0	31.7	3	74.7	73.7	2	0.5	0.2
NORTH DAKOTA	5	39.1	35.9	5	58.1	57.8	5	40.0	42.0	5	69.2	61.0			
SOUTH DAKOTA	3	34.4	32.9	3	57.4	55.9	3	22.0	22.0	3	69.0	70.0	2	2	1.35
MONTANA	1	72.2	71.4	1	60.1	58.9	1	33.0	34.0	1	93.0	84.0			
<b>MEAN</b>	<b>12</b>	<b>42.8</b>	<b>40.3</b>	<b>12</b>	<b>57.9</b>	<b>57.4</b>	<b>12</b>	<b>32.2</b>	<b>33.8</b>	<b>13</b>	<b>72.5</b>	<b>68.3</b>	<b>4</b>	<b>1.3</b>	<b>0.8</b>

## **FREYR VS. KEENE**

STATE	YIELD - BU/A			T.WT. - LBS/BU			HEADING - DAYS			HEIGHT - CM			LODGING - 1-9		
	LOCS	FREYR	KEENE	LOCS	FREYR	KEENE	LOCS	FREYR	KEENE	LOCS	FREYR	KEENE	LOCS	FREYR	KEENE
MINNESOTA	3	47.4	42.6	3	57.3	58.0	3	29.0	29.3	3	74.7	86.3	2	0.5	0.5
NORTH DAKOTA	5	39.1	36.4	5	58.1	58	5	40.0	41.6	5	69.2	72.0			
SOUTH DAKOTA	3	34.4	32.3	3	57.4	55.6	3	22.0	22.0	3	69.0	69.0	2	2	1.15
MONTANA	1	72.2	51.9	1	60.1	60.6	1	33.0	33.0	1	93.0	107.0			
<b>MEAN</b>	<b>12</b>	<b>42.8</b>	<b>38.2</b>	<b>12</b>	<b>57.9</b>	<b>57.6</b>	<b>12</b>	<b>32.2</b>	<b>32.9</b>	<b>13</b>	<b>72.5</b>	<b>77.7</b>	<b>4</b>	<b>1.3</b>	<b>0.8</b>

## **FREYR VS. 2375**

STATE	YIELD - BU/A			T.WT. - LBS/BU			HEADING - DAYS			HEIGHT - CM			LODGING - 1-9		
	LOCS	FREYR	2375	LOCS	FREYR	2375	LOCS	FREYR	2375	LOCS	FREYR	2375	LOCS	FREYR	2375
MINNESOTA	3	47.4	39.5	3	57.3	57.8	3	29.0	31.0	3	74.7	71.0	2	0.5	2.2
NORTH DAKOTA	5	39.1	37.5	5	58.1	58.4	5	40.0	40.8	5	69.2	64.2			
SOUTH DAKOTA	3	34.4	31.3	3	57.4	56.6	3	22.0	21.0	3	69.0	66.0	2	2	2.5
MONTANA	1	72.2	60.6	1	60.1	59.5	1	33.0	32.0	1	93.0	99.0			
<b>MEAN</b>	<b>12</b>	<b>42.8</b>	<b>38.4</b>	<b>12</b>	<b>57.9</b>	<b>57.9</b>	<b>12</b>	<b>32.2</b>	<b>32.7</b>	<b>13</b>	<b>72.5</b>	<b>69.3</b>	<b>4</b>	<b>1.3</b>	<b>2.4</b>

# 2001-3 OVER YEAR SUMMARY RANKED BY YIELD - AGRIPRO DATA

VARIETY	YIELD - BU/A <sup>2</sup>				TEST		PROT. %	HEAD, <sup>3</sup>	HT.		LOD.		SEED SCORE		TOMB.		DIS.	LR WORTH	
	01		02		WT. LBS/BU	1-9			1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9		1-9	
	01	02	03	AVG															
N98-0286	61.3	47.9	81.4	65.8	59.0	14.4	5.6	4.5	2.4	5.9	14.9	4.5	2.4	5.9	14.9	4.5	2.4	4.0	
FREYR	62.3	46.8	79.5	65.0	60.1	15.1	4.3	6.5	4.4	3.3	3.3	3.6	3.3	3.3	3.3	3.6	3.3	5.1	
KNUDSON	61.1	46.8	79.1	64.5	60.4	14.5	5.2	5.5	3.4	4.5	10.0	2.8	1.9	4.5	10.0	2.8	1.9	3.6	
NORPRO	57.8	47.3	78.1	63.1	59.4	15.1	5.5	4.5	3.3	5.3	18.4	3.4	3.0	5.3	18.4	3.4	3.0	3.3	
IVAN	55.5	42.2	80.6	62.0	59.6	13.8	6.9	4.7	1.9	4.9	10.7	3.7	1.9	4.9	10.7	3.7	1.9	3.9	
LARS	56.4	39.2	78.4	60.6	57.4	14.2	5.9	3.9	1.5	6.4	21.6	3.6	4.4	6.4	21.6	3.6	4.4	3.3	
BRIGGS <sup>1</sup>	57.8	45.0	72.0	60.1	60.6	15.5	2.3	5.7	8.3	4.3	6.0	3.9	2.4	4.3	6.0	3.9	2.4	4.4	
OXEN	60.8	41.3	70.8	59.6	58.2	15.2	3.7	5.8	5.8	5.5	11.1	6.5	6.0	5.5	11.1	6.5	6.0	5.2	
REEDER	55.7	42.6	73.0	59.1	59.8	15.5	4.1	6.7	5.0	4.5	8.5	3.9	5.9	4.5	8.5	3.9	5.9	4.6	
RUSS	52.7	43.0	74.9	59.0	58.9	14.9	3.6	7.1	6.4	5.0	8.7	6.3	6.8	5.0	8.7	6.3	6.8	5.1	
WALWORTH	57.9	41.8	71.2	58.9	58.9	15.4	3.0	7.0	6.6	4.2	5.5	6.2	6.5	4.2	5.5	6.2	6.5	6.0	
ALSEN	58.0	39.0	69.4	57.5	61.0	15.9	4.0	5.9	3.8	3.8	2.7	4.5	3.9	3.8	2.7	4.5	3.9	4.2	
GRANITE <sup>1</sup>	53.4	37.7	73.5	57.3	61.2	16.8	7.1	5.6	1.3	4.9	9.9	4.7	5.1	4.9	9.9	4.7	5.1	4.7	
N99-2234 <sup>1</sup>	54.3	41.8	68.7	56.7	60.2	16.2	6.2	7.8	7.0	4.0	4.0	5.0	3.3	4.0	4.0	5.0	3.3	5.1	
PARSHALL	52.9	41.7	69.9	56.7	61.5	15.6	4.2	8.4	5.1	3.7	7.7	4.9	6.6	3.7	7.7	4.9	6.6	5.2	
HANNA	52.7	40.5	69.9	56.3	60.0	15.7	5.3	8.1	5.6	4.4	4.5	5.4	5.1	4.4	4.5	5.4	5.1	5.2	
GUNNER	51.1	34.4	64.0	51.8	60.3	15.8	7.2	7.8	4.5	4.3	2.5	5.4	7.5	4.3	2.5	5.4	7.5	5.3	
NORA	50.8	32.5	64.2	51.3	58.0	16.3	4.8	3.8	3.9	4.7	13.0	6.6	4.3	4.7	13.0	6.6	4.3	5.2	
MEAN	56.3	41.8	73.3	59.2	59.7	15.3	4.9	6.1	4.4	4.7	9.3	4.7	4.6	4.7	9.3	4.7	4.6	4.6	
NO. OF LOCATION <sup>1</sup>	5	4	6	15	15	10	14	5	2	6	8	11	8	6	8	11	8	15	

<sup>1</sup>Not tested in 2001, data adjusted for averages

<sup>2</sup>Locations: Argusville, ND; Casselton, ND; Park River, ND; Maddock, ND; Crookson, MN; Breckenridge, MN

<sup>3</sup>Heading: 1= early; Height: 1 = short; Lodging: 1 = no lodging; Foliar disease: 1 = no disease

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## DISEASE DATA

## 2002 Uniform Regional Nursery

VARIETY	LEAF RUST				STEM RUST			
	FARGO ND	CARR. ND	LANG. ND	CROOK. MN	ST. PAUL MN	ST. PAUL* MN	FARGO* ND	CARR. ND
FREYR	tMS	10R	5R	5MS	tMS	50S	10MS	0
VERDE	10R	20MR-tMS	5R	tMR	tMR	40M	t-5MS	0
KEENE	10R	10R	5R	20MS-S	0	tR, 50MS	tR	0
2375	20S	60S	50S	-	10MS-S	40M	0-tMR	0

\*inoculated nursery

## 2002 Uniform Regional Scab Nursery

VARIETY	INCIDENCE %	SEVERITY %	DIS. %	VSK %	DON PPM
FREYR	85.6	34.5	25.3	18.3	15.7
2375	87.0	47.0	36.3	30.6	15.6
WHEATON	94.4	63.4	55.7	52.7	20.5
BACUP	73.9	28.0	18.6	18.8	9.7
OSLO	93.6	66.1	57.9	48.9	22.2
ND2710	57.3	17.2	8.6	16.1	8.8
NO. OF LOCS.	6.0	6.0	5.0	5.0	4.0

***Exhibit E.***  
***Statement of the Basis of Applicant's Ownership***

The variety for which Plant Variety Protection is hereby sought was developed by Joe Smith, an employee of Agripro Wheat. By agreement between employees and Agripro Wheat all rights to any invention, discovery, or development made by the employee while employed by Agripro Wheat, were assigned to Agripro Wheat, with no rights of any kind pertaining to 'Freyr' being retained by the employees.

By contractual agreement the variety 'Freyr' was purchased from Agripro Wheat, a business unit of Advanta USA, Inc. in June of 1996 and is currently owned by Monsanto Company.